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10/707,601	12/23/2003	Michael Scott Hebert	GEMS 0229 PA	1600
27256	7590	03/21/2006	EXAMINER	
ARTZ & ARTZ, P.C. 28333 TELEGRAPH RD. SUITE 250 SOUTHFIELD, MI 48034			SANEI, MONA M	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/707,601

Applicant(s)

HEBERT ET AL.

Examiner

Mona M. Sanei

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Allowable Subject Matter*

The indicated allowability of Claim 8 is withdrawn in view of the newly discovered reference(s) to Wakita (6,341,600). Rejections based on the newly cited reference(s) follow.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-4, 6, 9, 11, 13, 14, 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto (4,413,355) in view of Berry et al. (6,481,969).

Regarding Claims 1, 13, and 18, Matsumoto discloses a system comprising a target shaft (rotary shaft, Col. 1, lines 16-20; Figs. 2A, 2B, and 3, #16) and an x-ray target element (Col. 1, lines 12-14; Figs. 1 and 2A, #14) that is mounted to a target shaft (rotary shaft, Col. 1, lines 16-20; Figs. 2A, 2B, and 3, #16).

However, Matsumoto fails to disclose a system comprising a plurality of circumferential features formed in the element and at least one weight element adapted to be securable in a plurality of positions within one of the circumferential features such that the element is balanced.

Berry et al. discloses a system and method comprising a plurality of circumferential features [(circumferential balance groove, Col. 1, lines 13-17) and ("a plurality of grooves are formed on at least one of the axial faces of each of the wheels and spacers", Col. 3, line 67 to Col. 4, line 1)] formed in an element (wheels, spacers, Col. 3, lines 51-53; Fig. 1, #(12, 14, 16, and 18) and #(20, 22,

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and 24), respectively) and at least one weight element (balance weight, Col. 1, lines 20-24) adapted to be securable (Col. 1, lines 31-37) in a plurality of positions within one of the circumferential features (Col. 2, lines 4-8) such that the element is balanced (see title).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system disclosed by Matsumoto by incorporating the features disclosed by Berry et al.

One would have been motivated to make this modification to avoid operational stresses such as noise, vibrations, and bearing deterioration.

Regarding Claims 2, 14, and 19, Berry et al. discloses a system and method wherein one of the circumferential features comprises a circumferential groove (Col. 1, lines 13-17) formed in the element.

Regarding Claim 3, Berry et al. discloses a system wherein one of the circumferential features is positioned around a perimeter surface (radially outwardly opening groove, Col. 4, lines 10-11; Fig. 1, #52 and #54) of the element (spacers, Col. 4, line 10; Fig. 1, #22, and #24).

Regarding Claim 4, Berry et al. discloses a system wherein one of the circumferential features is positioned around a surface (“...in a plane normal to the axis of rotation...”, Col. 2, line 52) of the element.

Regarding Claim 6, Berry et al. discloses a system wherein one of the circumferential features comprises an entry port (loading aperture, Col. 2, lines 4-8) formed in the circumferential feature, the entry port allowing the at least one weight element to be inserted into the circumferential feature.

Regarding Claims 9 and 16, Berry et al. discloses a system wherein one of the circumferential features comprises a circumferential securing elbow slot (inclined side wall, Col. 4, lines 59-63), the at least one weight element including a securing elbow adapted to fit within the circumferential securing

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elbow slot and secure the at least one weight element within the circumferential feature (Col. 5, lines 1-5).

Regarding Claim 11, Berry et al. further discloses a system wherein the circumferential securing elbow slot comprises a triangular slot (Fig. 9).

2. Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto and Berry et al. as applied to Claims 1 and 13, and further in view of Hansen et al. (2002/0191749 A1).

Matsumoto as modified above suggests all the characteristic features of the present invention as recited above.

However, Matsumoto fails to disclose a system comprising a central neck portion extending from an x-ray facing surface along an inner x-ray target diameter.

Hansen et al. discloses a system comprising a central neck portion (axially-extending portion, [0019], lines 15-17; Fig. 3, #56) extending from an x-ray facing surface along an inner x-ray target ([0019], lines 1-4; Figs. 2 & 3, #40) diameter.

It would have been obvious to one of ordinary skill in the art at the time of the invention to place the circumferential balance groove of Berry et al. on the central neck portion of Hansen et al.

One would have been motivated to make this modification because the protruding characteristic of the central neck portion provides easier access for placement of balance weights on the circumferential groove.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto, Berry et al. and Wakita (6,341,600).

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Matsumoto discloses a system comprising a target shaft (rotary shaft, Col. 1, lines 16-20; Figs. 2A, 2B, and 3, #16) and an x-ray target element (Col. 1, lines 12-14; Figs. 1 and 2A, #14) that is mounted to a target shaft (rotary shaft, Col. 1, lines 16-20; Figs. 2A, 2B, and 3, #16).

However, Matsumoto fails to disclose a system comprising a circumferential feature formed in the element and at least one weight element adapted to be securable in a plurality of positions within the circumferential feature such that the element is balanced. Matsumoto also fails to disclose a system wherein the circumferential feature comprises a flange element positioned around a perimeter surface of the element and a plurality of mounting bores positioned along the flange element, the at least one weight element securable within any of the plurality of mounting bores.

Berry et al. discloses a system comprising a circumferential feature (circumferential balance groove, Col. 1, lines 13-17) formed in an element (wheels, spacers, Col. 3, lines 51-53; Fig. 1, #12, 14, 16, and 18) and #20, 22, and 24, respectively) and at least one weight element (balance weight, Col. 1, lines 20-24) adapted to be securable (Col. 1, lines 31-37) in a plurality of positions within the circumferential feature (Col. 2, lines 4-8) such that the element is balanced (see title).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system disclosed by Matsumoto by incorporating the features disclosed by Berry et al.

One would have been motivated to make this modification to avoid operational stresses such as noise, vibrations, and bearing deterioration.

Wakita discloses a system wherein the circumferential feature comprises a flange element positioned around a perimeter surface of an element (holding flange, Col. 6, line 12; Figs. 3, 4, and 6-10, #59) and a plurality of mounting bores (threaded holes, Col. 7, line 3; Figs. 4 and 6-10, #592a, #592b, and #592c) positioned along the flange element, an at least one weight element (balance weight screws, Col. 7, line 7; Figs. 4 and 6-10, #60) securable within any of the plurality of mounting bores.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system suggested by Matsumoto as modified above by incorporating the feature(s) disclosed by Wakita.

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One would have been motivated to make this modification in order to facilitate a more precise adjustment of balance (Col. 2, lines 10-11) as implied by Wakita.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto and Berry et al. as applied to Claim 9 above, and further in view of Siebolds et al. (2002/0020315 A1).

Matsumoto as modified above suggests all the characteristic features of the present invention as recited above.

However, Matsumoto fails to disclose a t-shaped slot.

Siebolds et al. discloses a t-shaped slot (t-slot, [0040]; Fig. 1, #2).

The t-shaped slot of Siebolds et al. is equally effective as the triangular slot of Berry et al. Further, applicant has provided no criticality regarding the particular slot configuration employed nor that it solves any long-standing problem in the art.

Therefore, it would have been an obvious matter of design for one of ordinary skill in the art at the time the invention was made to employ the t-shaped securing elbow slot of Siebolds et al. in place of the triangular slot suggested by Matsumoto as modified by Berry et al. in view of its functional equivalence.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto and Berry et al. as applied to Claim 2 above, and further in view of Barber (4,842,485).

Matsumoto as modified above suggests all the characteristic features of the present invention as recited above.

However, Matsumoto fails to disclose an expandable weight assembly including an expansion bore and an expansion screw, the expansion screw expanding the expandable weight assembly to secure the at least one weight element within the circumferential groove.



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Barber teaches an expandable weight assembly (Col. 1, line 61 to Col. 2, line 4; Figs. 1, 2, 3, & 5; #15) including an expansion bore (bore, Col. 2, lines 5-17; Figs. 3, 4, 5, 6, and 7; #37) and an expansion screw (Col. 2, lines 5-17; Figs. 3 & 5, #27), the expanding screw expanding the expandable weight assembly to secure the at least one weight element within the circumferential groove (circular groove, Col. 1, line 61 to Col. 2, line 4; Figs. 1, 3, & 5, #13).

It would have been obvious to one of ordinary skill in the art at the time of the invention modify the system suggested by Matsumoto as modified above by incorporating the feature disclosed by Barber.

One would have been motivated to make this modification because the friction fit of the expandable weight assembly allows for more precise placement.

6. Claims 1-4, 6, 13, 14, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto in view of Suzuki (6,449,000).

Regarding Claims 1, 13, and 18, Matsumoto discloses a system comprising a target shaft (rotary shaft, Col. 1, lines 16-20; Figs. 2A, 2B, and 3, #16) and an x-ray target element (Col. 1, lines 12-14; Figs. 1 and 2A, #14) that is mounted to a target shaft (rotary shaft, Col. 1, lines 16-20; Figs. 2A, 2B, and 3, #16).

However, Matsumoto fails to disclose a system comprising a plurality of circumferential features formed in the element and at least one weight element adapted to be securable in a plurality of positions within one of the circumferential features such that the element is balanced.

Suzuki discloses a system and method comprising a plurality of circumferential features (concentric recess, Col. 3, lines 42-53; Figs. 3-7, #32) formed in an element (Figs. 3-10) and at least one weight element (balance weight, Col. 3, lines 42-53; Fig. 3, #32) adapted to be securable (Col. 7, lines 49-53) in a plurality of positions within one of the circumferential features such that the element is balanced (Col. 3, lines 62-65).



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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system disclosed by Matsumoto by incorporating the features disclosed by Suzuki.

One would have been motivated to make this modification to avoid operational stresses such as noise, vibrations, and bearing deterioration.

Regarding Claims 2, 14, and 19, Suzuki discloses a system and method wherein one of the circumferential features comprises a circumferential groove (Col. 1, lines 13-20) formed in the element.

Regarding Claim 3, Suzuki discloses a system and method wherein one of the circumferential features is positioned around a perimeter surface (Fig. 9, #35) of the element.

Regarding Claim 4, Suzuki discloses a system and method wherein one of the circumferential features is positioned around a surface (see Figs. 3-7) of the element.

Regarding Claim 6, Suzuki discloses a system and method wherein one of the circumferential features comprises an entry port (Figs. 3-10) formed in the circumferential feature, the entry port allowing the at least one weight element to be inserted into the circumferential feature.

Regarding Claims 17 and 20, Matsumoto as modified above suggests all the characteristic features of the present invention as recited above.

However, Matsumoto fails to disclose a system comprising a circumferential flange on the element, the circumferential flange creating the circumferential features.

Suzuki discloses a system comprising a circumferential flange (rotor flange, Col. 8, lines 1-12; Fig. 9, #15) on the element, the circumferential flange creating the circumferential features.

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It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system suggested by Matsumoto as modified above by incorporating the feature disclosed by Suzuki.

One would have been motivated to make this modification to avoid operational stresses such as noise, vibrations, and bearing deterioration.

7. Claims 5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto and Suzuki as applied to Claims 1 and 13, and further in view of Hansen et al. (2002/0191749 A1).

Matsumoto as modified above suggests all the characteristic features of the present invention as recited above.

However, Matsumoto fails to disclose a system comprising a central neck portion extending from an x-ray facing surface along an inner x-ray target diameter.

Hansen et al. discloses a system comprising a central neck portion (axially-extending portion, [0019], lines 15-17; Fig. 3, #56) extending from an x-ray facing surface along an inner x-ray target ([0019], lines 1-4; Figs. 2 & 3, #40) diameter.

It would have been obvious to one of ordinary skill in the art at the time of the invention to place the circumferential balance groove of Berry et al. on the central neck portion of Hansen et al.

One would have been motivated to make this modification because the protruding characteristic of the central neck portion provides easier access for placement of balance weights on the circumferential groove.

8. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto, Suzuki and Wakita.

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Matsumoto discloses a system comprising a target shaft (rotary shaft, Col. 1, lines 16-20; Figs. 2A, 2B, and 3, #16) and an x-ray target element (Col. 1, lines 12-14; Figs. 1 and 2A, #14) that is mounted to a target shaft (rotary shaft, Col. 1, lines 16-20; Figs. 2A, 2B, and 3, #16).

However, Matsumoto fails to disclose a system comprising a circumferential feature formed in the element and at least one weight element adapted to be securable in a plurality of positions within the circumferential feature such that the element is balanced. Matsumoto also fails to disclose a system wherein the circumferential feature comprises a flange element positioned around a perimeter surface of the element and a plurality of mounting bores positioned along the flange element, the at least one weight element securable within any of the plurality of mounting bores.

Suzuki discloses a system comprising a circumferential feature (concentric recess, Col. 3; lines 42-53; Figs. 3-7, #32) formed in an element (Figs. 3-10) and at least one weight element (balance weight, Col. 3, lines 42-53; Fig. 3, #32) adapted to be securable (Col. 7, lines 49-53) in a plurality of positions within the circumferential feature such that the element is balanced (Col. 3, lines 62-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system disclosed by Matsumoto by incorporating the features disclosed by Suzuki.

One would have been motivated to make this modification to avoid operational stresses such as noise, vibrations, and bearing deterioration.

Wakita discloses a system wherein the circumferential feature comprises a flange element positioned around a perimeter surface of an element (holding flange, Col. 6, line 12; Figs. 3, 4, and 6-10, #59) and a plurality of mounting bores (threaded holes, Col. 7, line 3; Figs. 4 and 6-10, #592a, #592b, and #592c) positioned along the flange element, an at least one weight element (balance weight screws, Col. 7, line 7; Figs. 4 and 6-10, #60) securable within any of the plurality of mounting bores.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system suggested by Matsumoto as modified above by incorporating the feature(s) disclosed by Wakita.

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One would have been motivated to make this modification in order to facilitate a more precise adjustment of balance (Col. 2, lines 10-11) as implied by Wakita.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsumoto and Suzuki as applied to Claim 2 above, and further in view of Barber.

Matsumoto as modified above suggests all the characteristic features of the present invention as recited above.

However, Matsumoto fails to disclose an expandable weight assembly including an expansion bore and an expansion screw, the expansion screw expanding the expandable weight assembly to secure the at least one weight element within the circumferential groove.

Barber discloses an expandable weight assembly (Col. 1, line 61 to Col. 2, line 4; Figs. 1, 2, 3, & 5; #15) including an expansion bore (bore, Col. 2, lines 5-17; Figs. 3, 4, 5, 6, and 7; #37) and an expansion screw (Col. 2, lines 5-17; Figs. 3 & 5, #27), the expanding screw expanding the expandable weight assembly to secure the at least one weight element within the circumferential groove (circular groove, Col. 1, line 61 to Col. 2, line 4; Figs. 1, 3, & 5, #13).

It would have been obvious to one of ordinary skill in the art at the time of the invention modify the system suggested by Matsumoto as modified above by incorporating the feature disclosed by Barber.

One would have been motivated to make this modification because the friction fit of the expandable weight assembly allows for more precise placement.

#### ***Response to Arguments***

Applicant's arguments filed 11/30/2005 have been fully considered but they are not persuasive.

In response to applicant's argument that Berry et al. (6,481,969), Suzuki (6,449,000), Siebolds (2002/0020315), Barber (4,842,485), and Hansen et al. (2002/0191749) are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then

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be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992).

In this case:

Berry et al. discloses a system and method for balancing a rotating element (see abstract).

Suzuki discloses a system and method for balancing a rotating element (see abstract).

Siebolds discloses a system and method for balancing a rotating element (see abstract)

Barber discloses a system and method for balancing a rotating element (Col. 1, lines 5-9).

Hansen et al. discloses a system for balancing a rotating element ([0006], lines 1-13).

Therefore, Berry et al., Suzuki, Siebolds, Barber, and Hansen et al. are analogous art since the references are reasonably pertinent to the particular problem with which the applicant is concerned.

#### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mona M. Sanei whose telephone number is (571) 272-8657. The examiner can normally be reached on Monday through Friday, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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EDWARD J. GLICK  
SUPERVISORY PATENT EXAMINER